

Critical Thinking Sections Instructor Session

Third of Three

May 11, 2018

You may find a video of this workshop at:

<https://www.youtube.com/watch?v=1q4Hxck9vSo>

CRITICAL THINKING LEARNING OUTCOMES

With diligent effort on their part, students will:

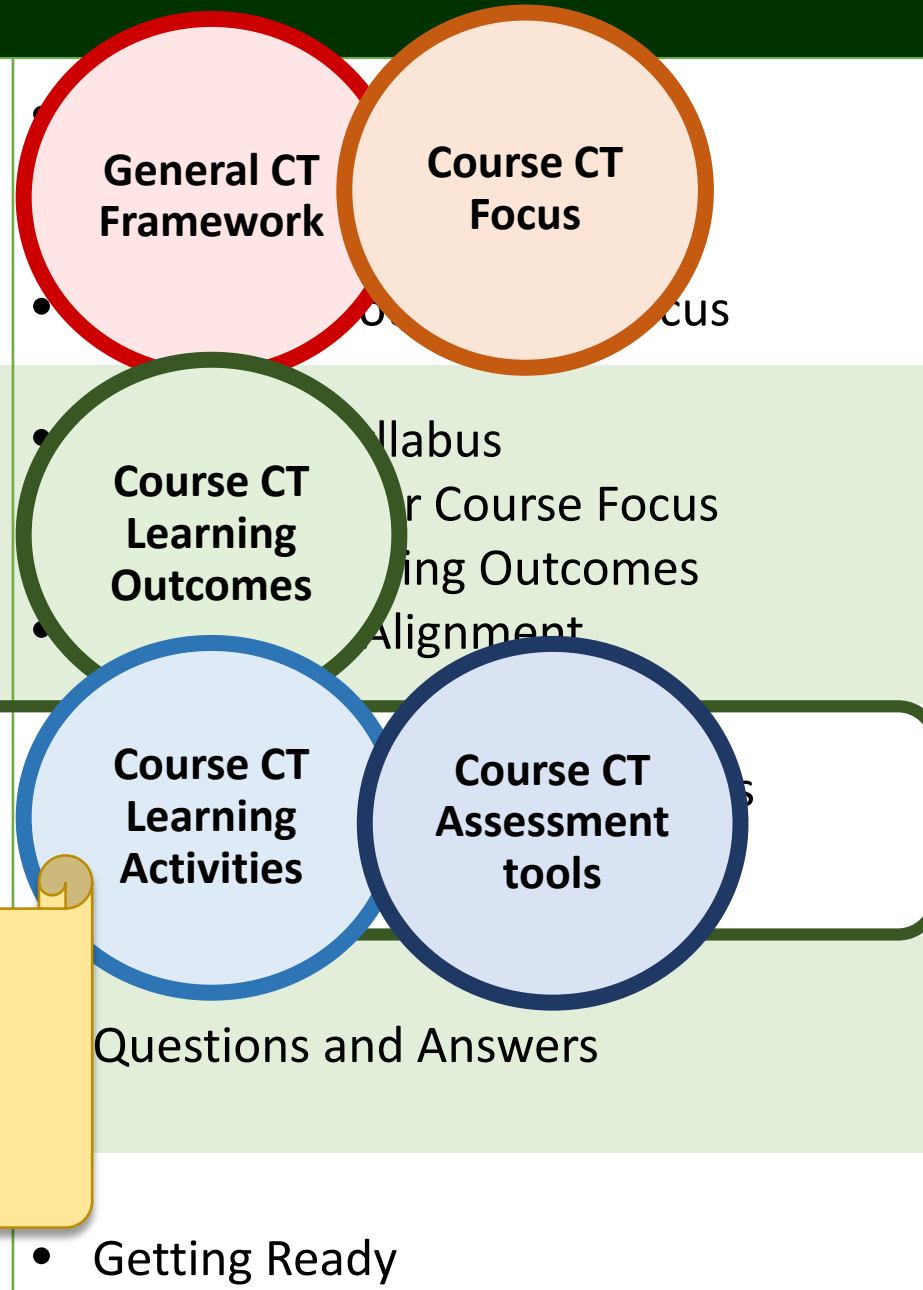
1. Recognize critical thinking as a process of identifying, analyzing, evaluating, and constructing reasoning in deciding what conclusions to draw or actions to take.

And be able to do one or more of the following:

- 2A. Identify reasoning as they apply it to general or discipline-specific questions or issues.
- 2B. Analyze reasoning as they apply it to general or discipline-specific questions or issues.
- 2C. Evaluate reasoning as they apply it to general or discipline-specific questions or issues.
- 2D. construct reasoning as they apply it to general or discipline-specific questions or issues.

SESSIONS

| | |
|------------------|---|
| Session 1 | Identifying the Critical Thinking Focus for Your Course March 16, 2018, Noon – 1:00 and 2:00-3:00; ALB 650 |
| Session 2 | Identifying the Critical Thinking Outcomes for Your Course April 20, 2018, Noon – 1:00 and 2:00-3:00; ALB 650 |
| Session 3 | Assessing and Teaching for Critical Thinking in Your Course May 11, 2018, Noon – 1:00 and 2:00-3:00; ALB 650 |
| Session 4 | Review (Optional) May 25, 2018, Noon – 1:00 |
| Session 5 | Pre-Class Contract Week Check in |



| | | |
|--|--|--|
| Approaches Toward CT Instruction | | |
| | | |
| | | |

Ennis, R. H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, 18(3), 4–10.

| Approaches Toward CT Instruction | | |
|---|--|--|
| There Is <u>No</u> General CT Instruction in a Stand Alone Course | | |
| | | |

Ennis, R. H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, 18(3), 4–10.

| | | |
|--|--|--|
| <p>Approaches Toward CT Instruction</p> | <p>CT Skills <u>Not</u> Explicitly Taught in Discipline-Specific Courses</p> | |
| <p>There Is <u>No</u> General CT Instruction in a Stand Alone Course</p> | | |
| | | |

Ennis, R. H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, 18(3), 4–10.

| | | |
|--|--|--|
| <p>Approaches Toward CT Instruction</p> | <p>CT Skills <u>Not</u> Explicitly Taught in Discipline-Specific Courses</p> | |
| <p>There Is <u>No</u> General CT Instruction in a Stand Alone Course</p> | <p>Immersion Approach</p> | |
| | | |

Ennis, R. H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, 18(3), 4–10.

| Approaches Toward CT Instruction | CT Skills <u>Not</u> Explicitly Taught in Discipline-Specific Courses | CT Skills <u>Are</u> Explicitly Taught in Discipline-Specific Courses |
|---|--|--|
| There Is <u>No</u> General CT Instruction in a Stand Alone Course | Immersion Approach | |
| | | |

Ennis, R. H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, 18(3), 4–10.

| Approaches Toward CT Instruction | CT Skills <u>Not</u> Explicitly Taught in Discipline-Specific Courses | CT Skills <u>Are</u> Explicitly Taught in Discipline-Specific Courses |
|---|--|--|
| There Is <u>No</u> General CT Instruction in a Stand Alone Course | Immersion Approach | Infusion Approach |
| | | |

Ennis, R. H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, 18(3), 4–10.

| Approaches Toward CT Instruction | CT Skills <u>Not</u> Explicitly Taught in Discipline-Specific Courses | CT Skills <u>Are</u> Explicitly Taught in Discipline-Specific Courses |
|---|--|--|
| There Is <u>No</u> General CT Instruction in a Stand Alone Course | Immersion Approach | Infusion Approach |
| There <u>Is</u> General CT Instruction in a Stand Alone Course | | |




Ennis, R. H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, 18(3), 4–10.

| Approaches Toward CT Instruction | CT Skills <u>Not</u> Explicitly Taught in Discipline-Specific Courses | CT Skills <u>Are</u> Explicitly Taught in Discipline-Specific Courses |
|---|--|--|
| There Is <u>No</u> General CT Instruction in a Stand Alone Course | Immersion Approach | Infusion Approach |
| There <u>Is</u> General CT Instruction in a Stand Alone Course | General Approach | |

Ennis, R. H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, 18(3), 4–10.

| Approaches Toward CT Instruction | CT Skills <u>Not</u> Explicitly Taught in Discipline-Specific Courses | CT Skills <u>Are</u> Explicitly Taught in Discipline-Specific Courses |
|---|--|--|
| There Is <u>No</u> General CT Instruction in a Stand Alone Course | Immersion Approach | Infusion Approach |
| There <u>Is</u> General CT Instruction in a Stand Alone Course | General Approach | Mixed Approach |




Ennis, R. H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, 18(3), 4–10.

| Approaches Toward CT Instruction | CT Skills <u>Not</u> Explicitly Taught in Discipline-Specific Courses | CT Skills <u>Are</u> Explicitly Taught in Discipline-Specific Courses |
|---|--|---|
| There Is <u>No</u> General CT Instruction in a Stand Alone Course |  Immersion Approach | Infusion Approach |
| There <u>Is</u> General CT Instruction in a Stand Alone Course | General Approach |  Mixed Approach  |

Approaches in which
instructors received special
training in teaching CT
had largest effects.

Abrami, P. C., Bernard, R. M., Borokhovski, E., Wade, A., Surkes, M. A., Tamim, R., & Zhang, Dai. (2008). Instructional interventions affecting critical thinking skills and dispositions: A stage 1 meta-analysis. *Review of Educational Research, 78*(4), 1102–1134.

Approaches Toward CT Instruction

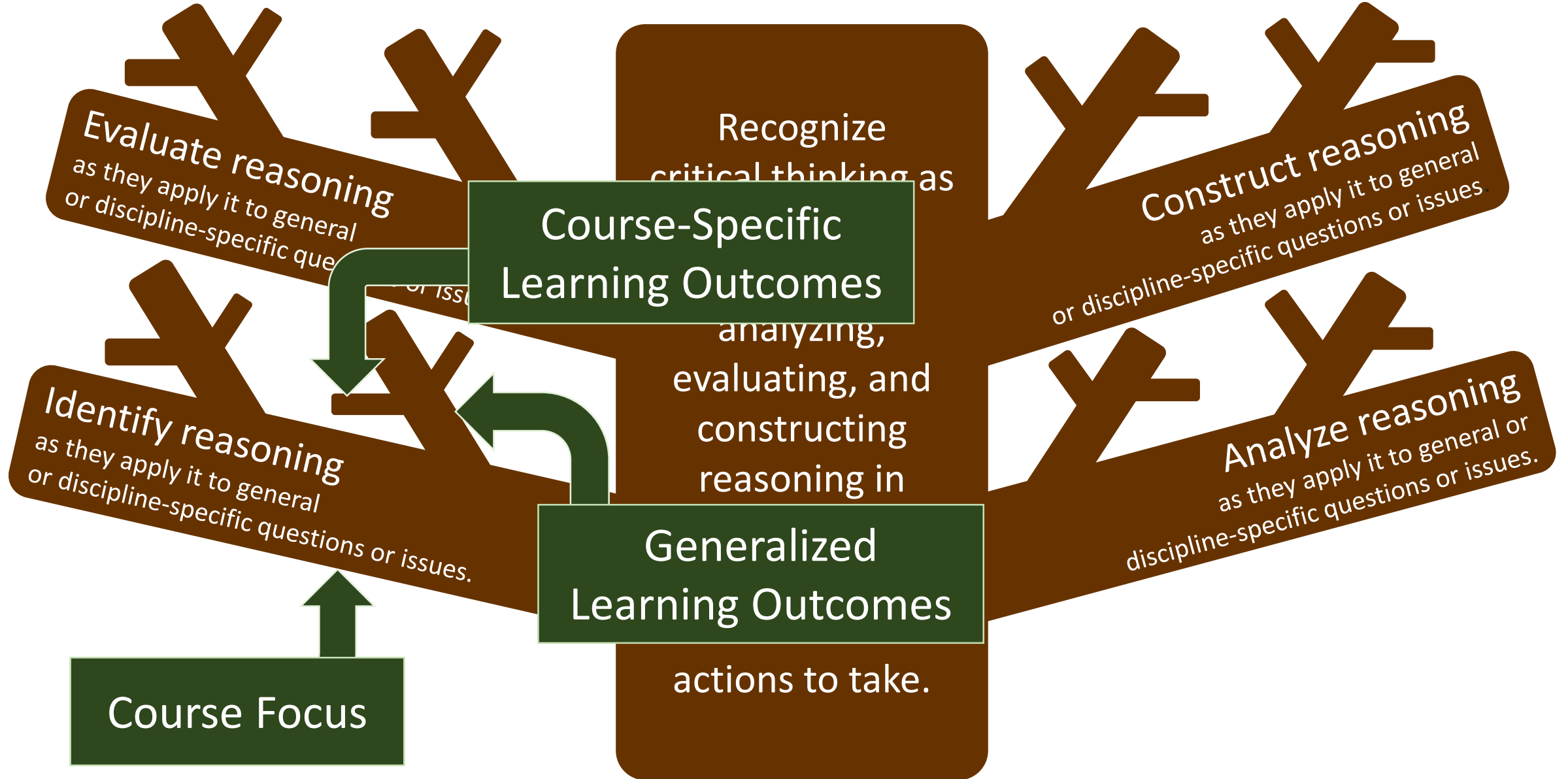
| | CT Skills <u>Not</u> Explicitly Taught in Discipline-Specific Courses | CT Skills <u>Are</u> Explicitly Taught in Discipline-Specific Courses |
|---|---|---|
| There Is <u>No</u> General CT Instruction in a Stand Alone Course |  Immersion Approach | Infusion Approach |
| There <u>Is</u> General CT Instruction in a Stand Alone Course | General Approach |  Mixed Approach  |

Ready-Made Learning Modules with Assessment Included

Approaches in which instructors received special training in teaching CT had largest effects.

Abrami, P. C., Bernard, R. M., Borokhovs, Tamim, R., & Zhang, Dai. (2008). Instructional approaches to teaching critical thinking skills and dispositions: A meta-analysis. *Educational Research, 78*(4), 1102–1134

GENERAL CT FRAMEWORK



GENERAL CT FRAMEWORK

The Model has Evolved.

Recognize

Evaluate reasoning
as they apply it
or discipline-spe

... reasoning
... it to general
... ns or issues

Identify reasoning
as they apply it to
or discipline-specific questions or issues.

... reasoning
... it to general or
... estions or issues.

Generalized
Learning Outcomes

discipline

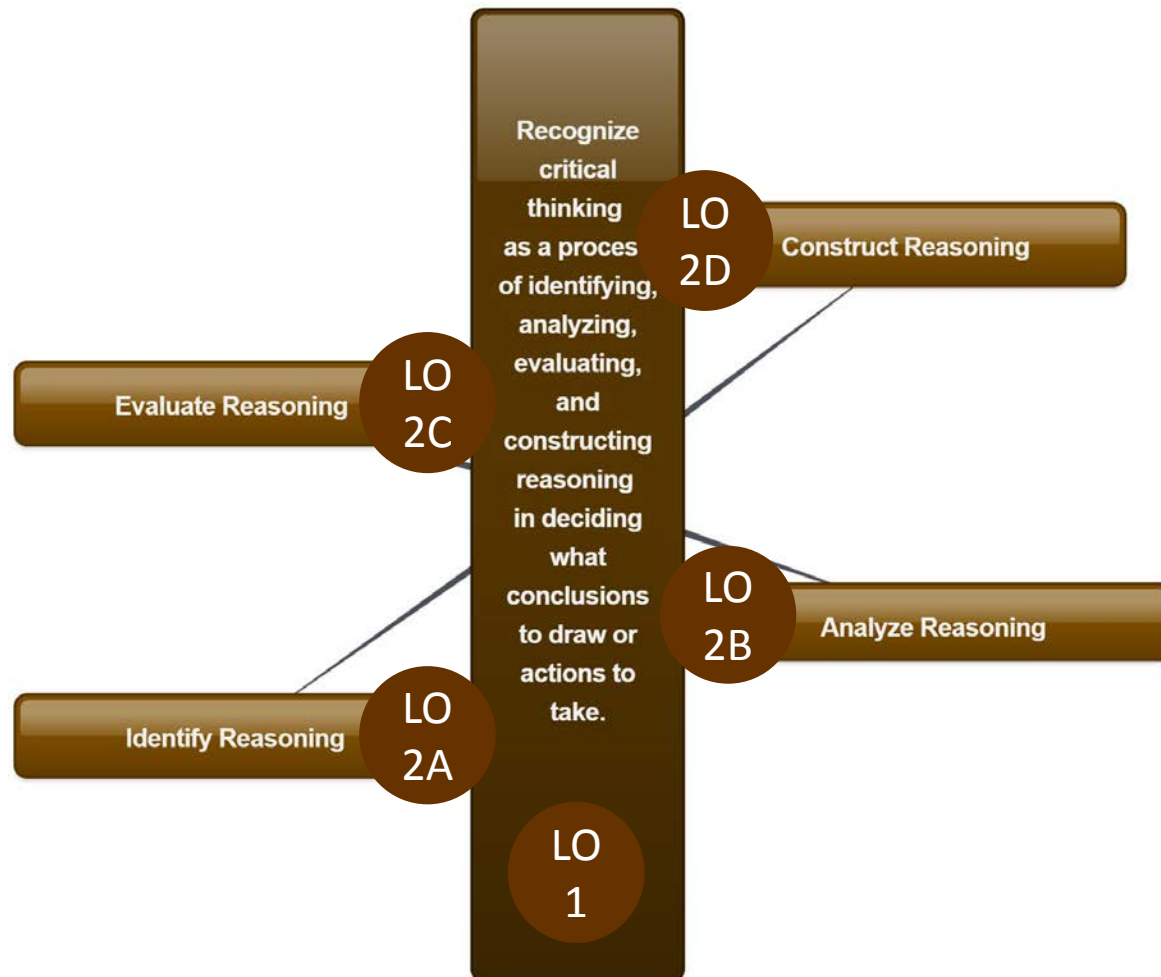
actions to take.

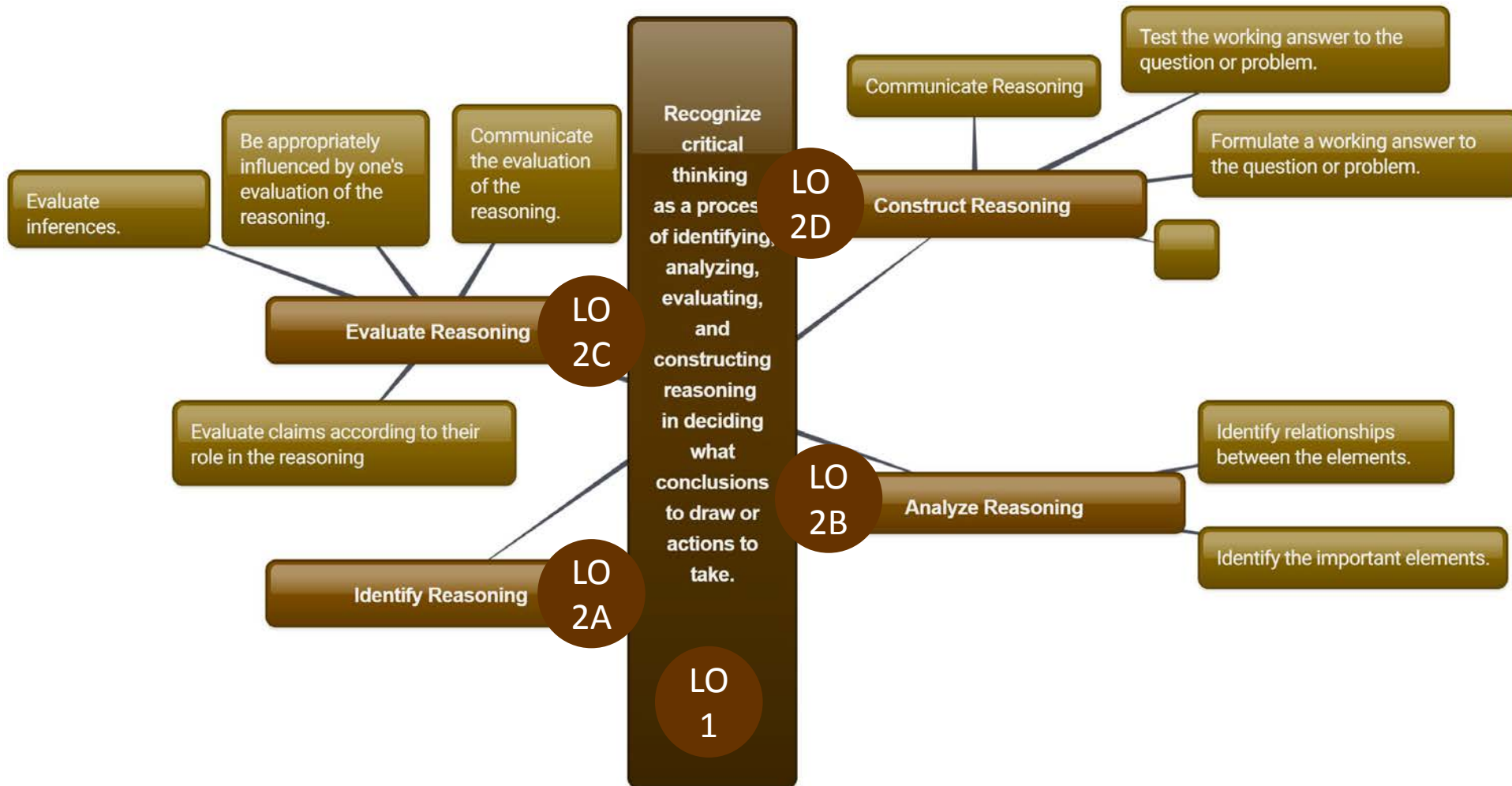
Course Focus

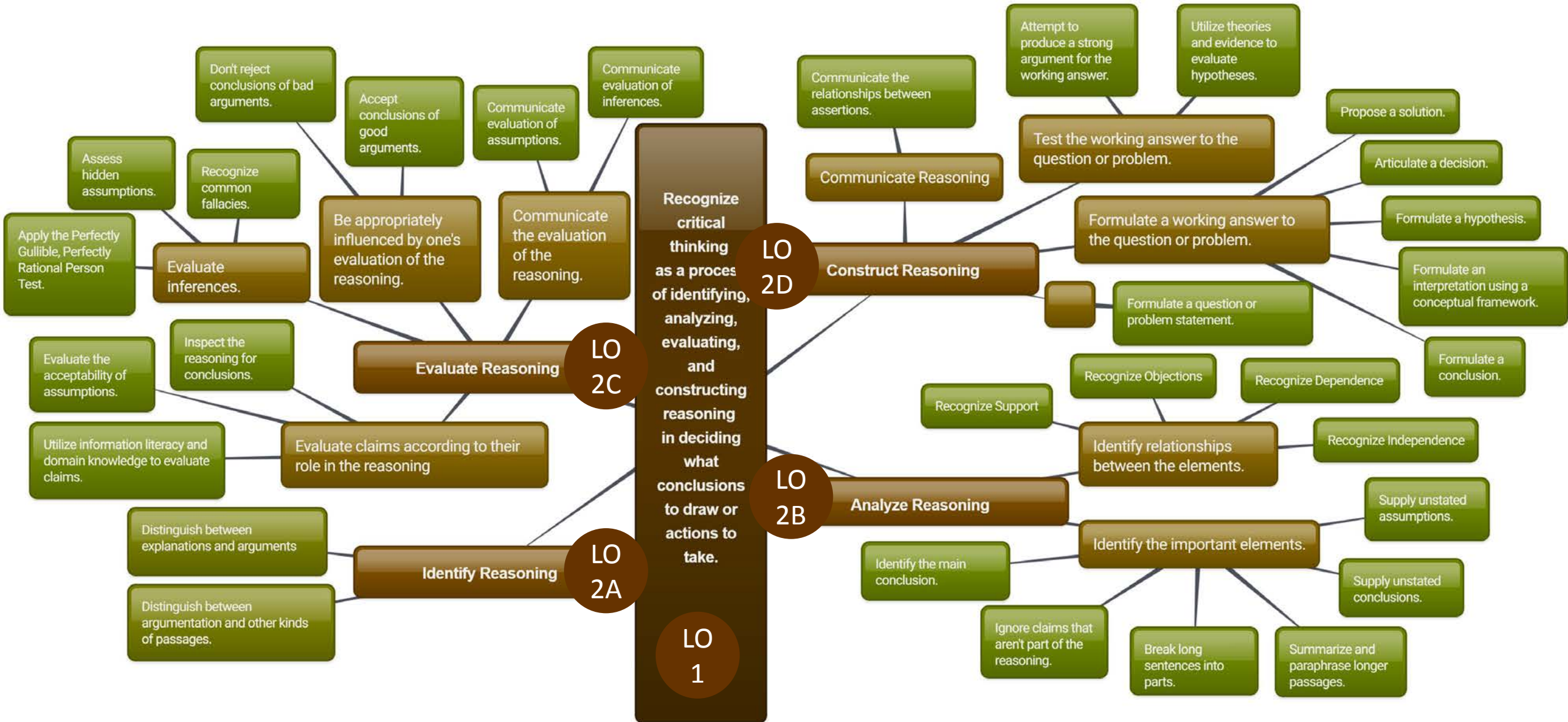


Recognize
critical
thinking
as a process
of identifying,
analyzing,
evaluating,
and
constructing
reasoning
in deciding
what
conclusions
to draw or
actions to
take.

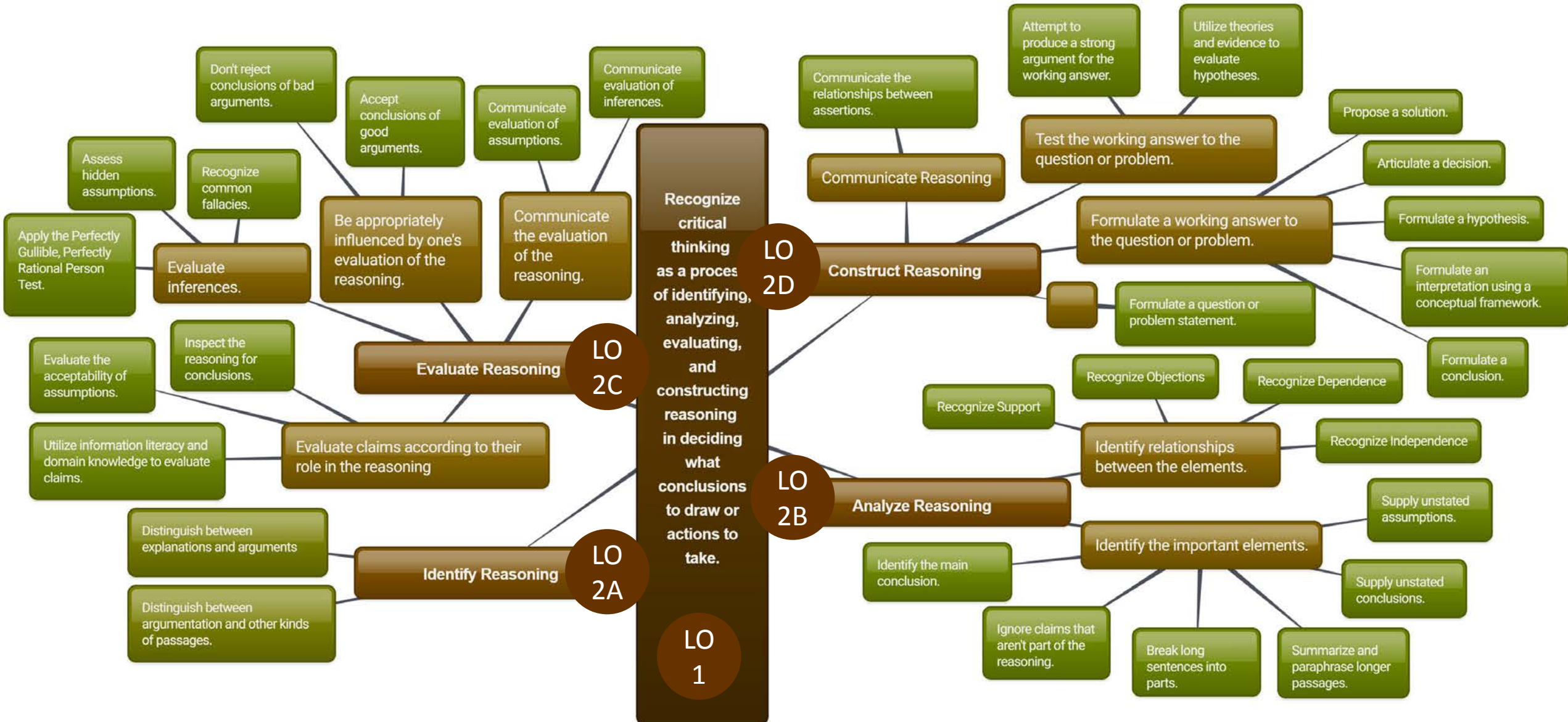
LO
1





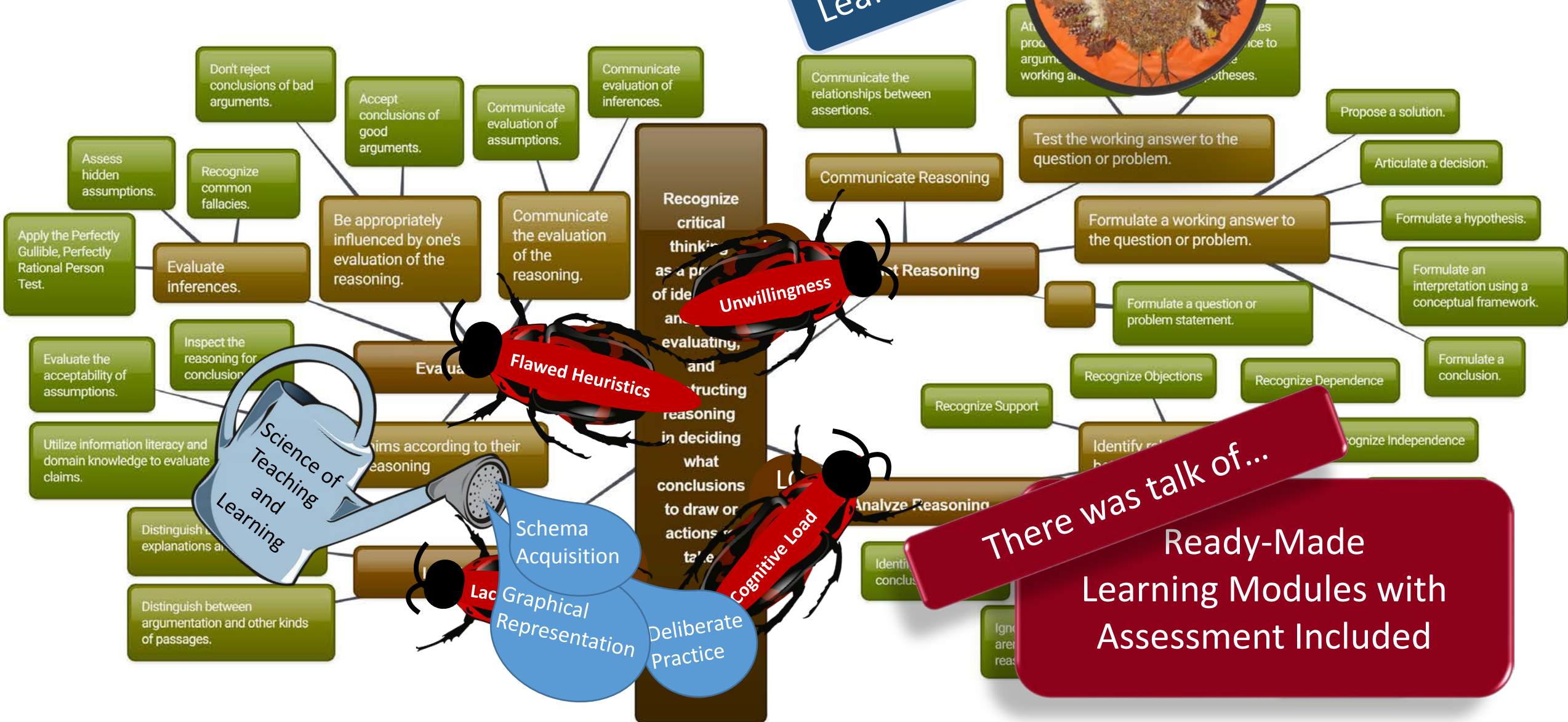


- Course-level learning outcomes are small branches
- Lesson-level learning outcomes are leaves.



- Leaves are primitive skills.
- Course-level learning outcomes are skill-sets.

Leaf Collages!

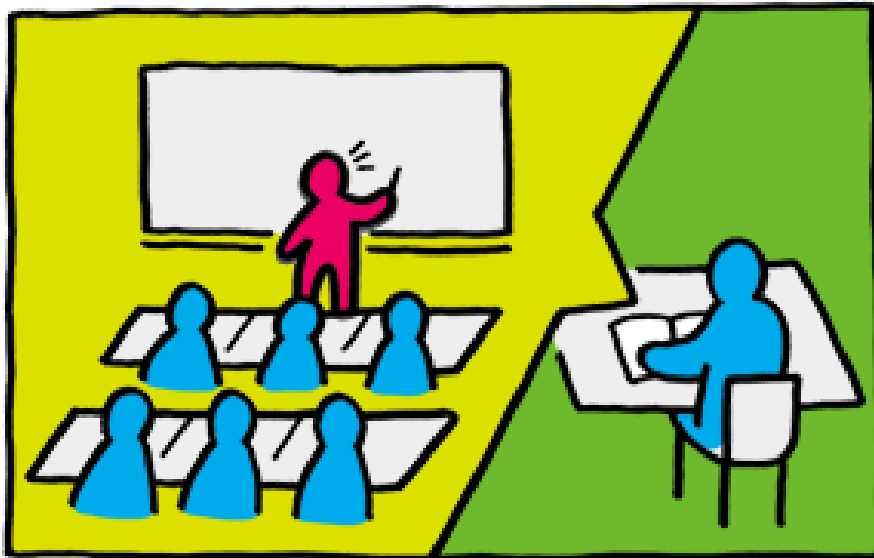


CT MODULES & TEACHING ACTIVITIES

Flipped Classroom Methodology

The **Traditional** Model

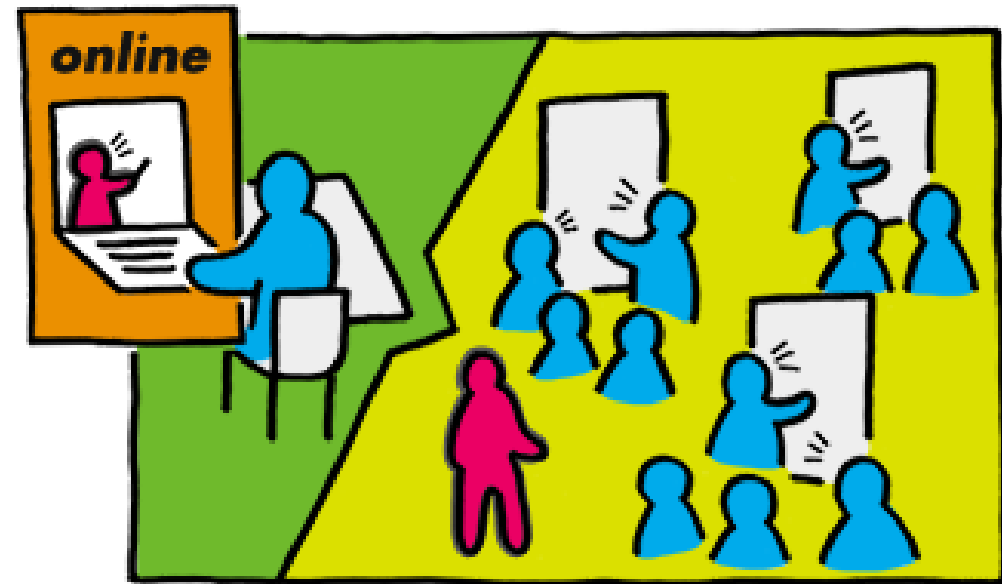
Knowledge **Acquisition**



Knowledge **Construction**

The **Flipped** Model

Knowledge **Acquisition**



Knowledge **Construction**

Copyright © FUT, The University of Tokyo. All Rights Reserved.

[Image source](#)

CT MODULES & TEACHING ACTIVITIES

| CT LO | Module (Videos prepared during Summer 2018) | Assessment Tool | Budget Time for Homework and In-class Instruction |
|-------|---|--|--|
| 1 | CT Overview | Self-graded quiz (Canvas/ D2L) | Homework (H) 1 – Watch CT Overview Video (10-15 minutes) and take quiz after |
| 1 | CT Key Terms | Self-graded quiz (Canvas/ D2L) | H2 – Watch CT Key Terms Video (10-15 minutes) and take quiz after Lecture (L) 1 : Apply to discipline |
| 2A | Identifying Reasoning | Self-graded quiz (Canvas/ D2L) | H3 – Watch Identifying Reasoning Video (10-15 minutes) and take quiz after L2 : Apply to discipline |
| 2B | Analyzing Reasoning | Self-graded quiz (Canvas/ D2L) | Mapping can truly help. |
| 2C | Evaluating Reasoning | Self-graded quiz (Canvas/ D2L) | Mapping can truly help. |
| 2D | Constructing Reasoning | Embedded course assignment (essay, report, map, etc.) | Mapping can truly help. Templates & rubrics are encouraged & will be provided. |

Required LO

CT MODULES & TEACHING ACTIVITIES


1 CT Overview Module



[Link](#); *Sample video for your consideration*

- CT Process
- CT Skills
- CT Dispositions

| Suggested Activities (Week 1 or 2) | Just a Bit | A Little More | Quite a Bit |
|--|------------|---------------|-------------|
| (10 min) Group/ pair activity: Create <u>a concept map of CT</u> | | ✓ | ✓ |
| (15-20 min) Groups/ pairs present their maps to class for discussion | | | ✓ |
| (10-15 min) Brief lecture: How is critical thinking practiced in your disciplines, ideally referring back to & expanding on some the students' maps. | ✓ | ✓ | ✓ |

 Formative (in-class) and summative (D2L/Canvas quiz) assessment options

CT MODULES & TEACHING ACTIVITIES

1

CT Key Terms



[Link](#); *Sample video for your consideration*

- Especially important terms and concepts for your discipline

| Suggested Activities | Just a Bit | A Little More | Quite a Bit |
|--|------------|---------------|-------------|
| Warm-Up Activity: Term of the Day | ✓ | ✓ | |
| Ice-Breaker Activity: Which CT term did you find the most useful? the least useful? the most confusing? the easiest? | | ✓ | |

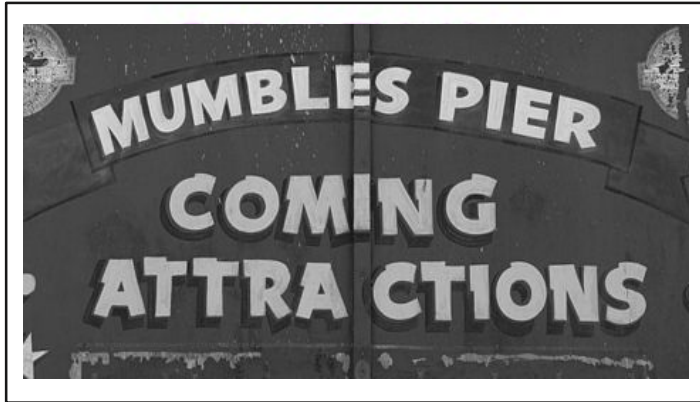


Formative (in-class) and summative (D2L/Canvas quiz) assessment options

CT MODULES & TEACHING ACTIVITIES

2A

Identifying Reasoning



• Types of Passages

- Argument
- Explanation of why
- Explanation of how
- Description
- List of items or directions

• Logical Connectors

| Suggested Activities (Week 2 or 3) | Just a Bit | A Little More | Quite a Bit |
|--|------------|---------------|-------------|
| Identify the Logical Connectors in a Passage | ✓ | | |
| Group/ Pair to Class Activity: Identify the type of distributed passages, present and explain to class | | ✓ | |
| Locate a passage of a given type outside of class | | | ✓ |



Formative (in-class) and summative (D2L/Canvas quiz) assessment options

CT MODULES & TEACHING ACTIVITIES

2B

Analyzing Reasoning



| Suggested Activities | Just a Bit | A Little More | Quite a Bit |
|-------------------------------------|------------|---------------|-------------|
| Identify the conclusion. | ✓ | ✓ | ✓ |
| Identify a reason and an objection. | | ✓ | ✓ |
| Completely track the reasoning. | | | ✓ |

- Identifying parts of argument
 - Main conclusion
 - Supporting claims
 - Objections and rebuttals
 - Dependent and independent claims
 - Inferences
- Mapping an argument
 - <https://www.rationaleonline.com/MindMup 2>

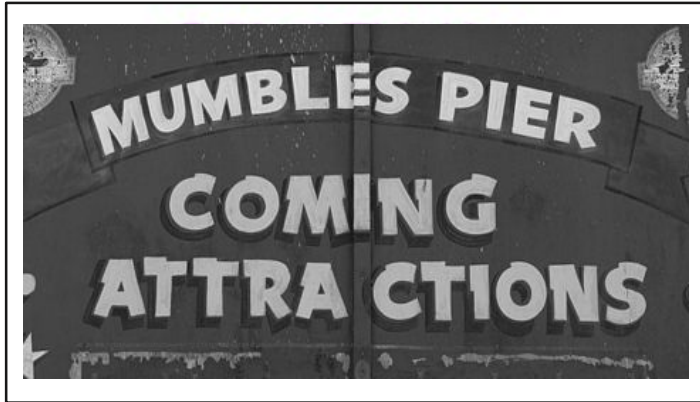


Formative (in-class) and summative (D2L/Canvas quiz) assessment options

CT MODULES & TEACHING ACTIVITIES

2C

Evaluating Reasoning



- Assessing Claims
 - Information literacy
 - Treating assumptions and conclusions differently
- Assessing Inferences
 - “Bob” Test
 - Identifying and assessing unstated assumptions

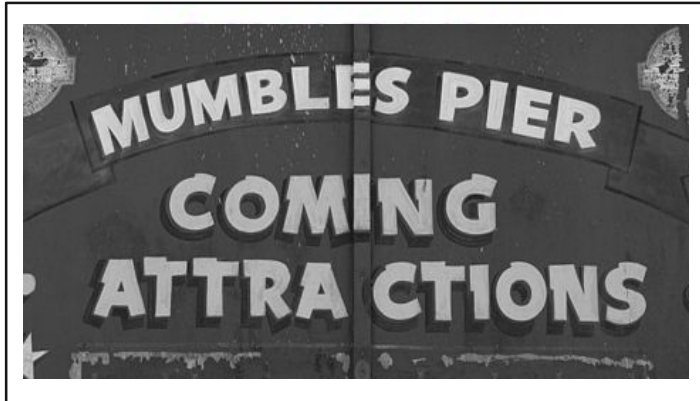
| Suggested Activities | Just a Bit | A Little More | Quite a Bit |
|---|------------|---------------|-------------|
| Evaluate an assumption. | ✓ | ✓ | ✓ |
| Evaluate an inference. | | ✓ | ✓ |
| Evaluate a conclusion by assessing the reasoning. | | | ✓ |



Formative (in-class) and summative (D2L/Canvas quiz) assessment options

CT MODULES & TEACHING ACTIVITIES

2D Constructing Reasoning



- Formulating a Question
- Articulating an Answer
- Evaluating the Answer
- Defending the Answer

| Suggested Activities | Just a Bit | A Little More | Quite a Bit |
|--|------------|---------------|-------------|
| Fill in a Simple Argument Template | ✓ | | |
| Fill in a Moderately Complex Argument Template | | ✓ | |
| Construct an Argument without a Template | | | ✓ |



Rubrics for essays, lab Reports, debates, for use as formative and summative assessment

OVER THE SUMMER...



- Construct CT Modules, Teaching Activities, and Assessment Instruments.
- Reach out to local employers and conduct a CT task analysis.
- Catch up on the latest and most relevant CT research.
(<https://railct.com/critical-thinking-research-gateway/>)
- Answer any questions you might have about your CT learning outcomes, assessments, or activities.

Participants of FEG Luncheon Meeting on Friday, May 11, 2018

| # | First Name: | Last Name: | Department: |
|----|-------------|--------------|-----------------------------------|
| 1 | Sarah Jane | Alger | Biology |
| 2 | Valerie | Barske | History and International Studies |
| 3 | Karin | Bodensteiner | Biology |
| 4 | Maggie | Bohm-Jordan | Sociology and Social Work |
| 5 | Dave | Dettman | Library |
| 6 | Cary | Elza | Communication |
| 7 | Joshua | Horn | Philosophy |
| 8 | Todd | Huspeni | Academic Affairs |
| 9 | Samantha | Kaplan | Geography and Geology |
| 10 | Mary Jae | Kleckner | SBE |
| 11 | Vera | Klekovkina | World Languages and Literatures |
| 12 | Dejan | Kuzmanovic | English |
| 13 | Thomas | Lentz | Biology |
| 14 | Wade | Mahon | English |
| 15 | Ismaila | Odogba | Geography and Geology |
| 16 | Jodi | Olmsted | Health Care Professions |
| 17 | Holly | Petrillo | CNR/Forestry |
| 18 | Cady | Sartini | Wildlife |
| 19 | Nancy | Shefferly | Biology |
| 20 | Krista | Slemmons | Biology |
| 21 | Pam | Terrell | CSD |
| 22 | Lisa | Theo | Geography/Geology |
| 23 | Dona | Warren | Philosophy |
| 24 | Emily | Wisinski | Tutoring-Learning Center |
| 25 | Jason | Zinser | Philosophy |